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THE LONG-CLAWED SOUTH AMERICAN RODENTS OF THE GENUS NOTIOMYS

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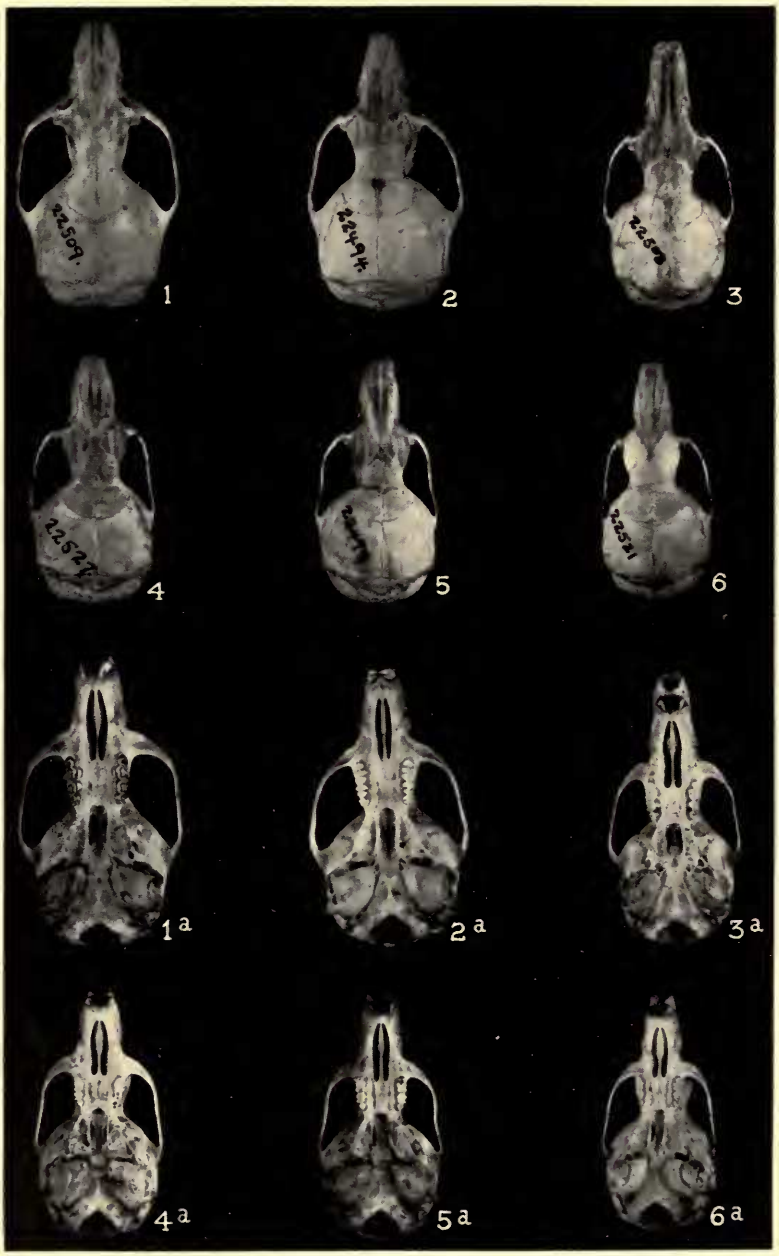

SKULLS OF NOTIOMYS.

1, 1a. N. VESTITUS. 2, 2a. N. MEGALONYX. 3, 3a. N. CONNECTENS.
4, 4a. N. V. ARAUCANUS. 5, 5a. N. VALDIVIANUS. 6, 6a. N. V. CHILOENSIS.

THE LONG-CLAWED SOUTH AMERICAN RODENTS OF THE GENUS NOTIOMYS

BY WILFRED H. OSGOOD

The small mammals collected on the Captain Marshall Field Expedition to Chile in 1923-24 include a considerable number of the long-clawed rodents variously referred in recent years to *Notiomys*, *Chelemys*, *Geoxus* and, earlier, to *Akodon* and *Oxymycterus*. The external characters common to the species previously described have served to give a vernacular recognition to their group relationship but, apparently on account of scrappy material in which cranial distinctions were magnified, the different species have been shunted from one genus to another and, latterly, nearly every well-marked one has been provided with its own generic name. The collections include several new forms and a much larger representation of others than has been available previously. Study of these leads to the conclusion that *Notiomys*, *Chelemys* and *Geoxus* form one natural group for which only one generic name is necessary. This group appears to be most nearly related to *Oxymycterus* and, in fact, is distinguished from that genus with difficulty except by external characters. These external characters are correlated with subfossorial habits and include, besides the elongated front claws, a thick soft pelage, small ears, short legs and a shortened tail.

In the light of present material, the group contains not more than four, or possibly five, forms which do not conceivably intergrade with one another as geographic races or subspecies. These are represented by *edwardsi*, *valdivianus*, *vestitus* and *connectens*. Two of them, *edwardsi* and *connectens*, appear to stand alone, but both are species so far known only from single specimens. The others, *valdivianus* and *vestitus*, respectively represent two series of relatively small and large forms. The extremes of size and the cranial characters associated with them in these two series are quite divergent, but the gap is largely bridged by *connectens* and *megalonyx*. The range of size throughout the genus runs through a graded series which is well indicated by the actual measurements of the toothrow. Beginning with the smaller forms, these measurements are as follows: *N. edwardsi* 3.2 mm.; *valdivianus* 3.2-3.5; *araucanus* 3.7; *connectens* 4.2; *megalonyx* 4.5-4.8; *vestitus* 5.3.

Any attempt to use the size of the teeth as a basis of generic separation, therefore, results in confusion. Similar gradations are found in cranial characters. Certain skulls of *valdivianus*, although smaller and having a somewhat more swollen lacrymal region, are almost identical in shape and proportions with those of *megalonyx*. In these respects they seem even more similar to *megalonyx* than to *chiloensis* from which they are scarcely distinguishable externally. This being the case, all confidence is lost in the generic value of similar cranial characters in *edwardsi*, and the conclusion is forced that all the forms should be included in one genus under the name *Notiomys*. It would be more fortunate if one of the better known species had been used as the basis of the earliest generic name in the group, leaving the status of *edwardsi* as a matter which, by later consideration with ample material, could not possibly affect the generic name of any other form. Since *edwardsi* is the type of *Notiomys*, however, action must be based upon the best available evidence. Separate generic recognition for a single very imperfectly known species has no justification unless characters of unmistakable importance can be pointed out.

For the loan of important specimens, including the type of a new subspecies, grateful acknowledgment is made to the U.S. National Museum.

A synopsis of the genus *Notiomys* follows:

Notiomys edwardsi Thomas.

Hesperomys (*Notiomys*) *Edwardsii* Thomas in Milne-Edwards, Miss. Sci. du Cap Horn 1882-1883, **6**, Mamm., pp. 24-26, pl. III, fig. 1, pl. VIII, figs. 1-1e, 1890.

Notiomys Edwardsii Trouessart, Catal. Mamm., p. 540, 1897; ibid, Suppl., p. 435, 1904.

Notiomys edwardsii Allen, Mamm. So. Patagonia, Repts. Princeton Univ. Expeds., **3**, p. 81, 1905.

Notiomys edwardsi Thomas, Ann. & Mag. Nat. Hist., (9), **3**, p. 208, Feb. 1919—under *Geoxus fossor*.

Type locality.—South of Santa Cruz, Argentina, near S. Lat. 50°.

Range.—Recorded from the type locality and from Valle del Lago Blanco, Chubut (Thomas, l.c. 1919).

General characters.—Similar to *N. michaelseni* in size and external characters, short tail and long front claws; color much paler, grayish faun color above, white below. Skull with the same small teeth as in *michaelseni*, but general proportions of skull short and heavy rather

than long and light. According to Thomas "the skull is short and broad, with short conical muzzle, very broad and square-edged interorbital region, and strongly built braincase."

Measurements.—Type: Total length 115; head and body 80; tail 35; hind foot 16 (without claw?). Skull of type: Basal length 20; greatest breadth 13; length of nasals 9.7; interorbital constriction 5.4; interparietal 10 x 6; diastema 6.1; upper toothrow 3.2.

This species can be characterized only on the basis of the original description and figures. Besides the type, only one other specimen has been recorded, an immature example from Chubut examined by Thomas. Since this species is the type of the genus, it is most unfortunate that material representing it is so scanty. Any disposition of it, therefore, is somewhat provisional. Thomas has been inclined to give it separate generic as well as specific recognition and, since he not only described it originally, but has lately made careful reexamination of the skull (l.c., 1919, p. 208), his opinion is most important. In view of the range of variation in cranial characters shown by other forms having the same external characters, however, it now seems that the external characters are the ones most significant of group relationship.

As a species, *edwardsi* is well distinguished by its light color and its stout skull with broad and sharply edged interorbital space. In other groups of rodents in which material is more abundant, such characters have seldom been found of more than specific importance and it is rare that they are constantly correlated with other characters common to a natural group. In external and in dental characters, *edwardsi* is in complete agreement with other members of the genus.

Notiomys valdivianus Philippi.

Oxymycterus valdivianus Philippi, Archiv. f. Naturgesch., **24** (1), p. 303, 1858.

[*Acodon*] *valdivianus* Thomas, Ann. & Mag. Nat. Hist., (6), **14**, p. 363, 1894.

Akodon valdivianus Trouessart, Catal. Mamm., p. 538, 1897; ibid, Suppl., p. 435, 1904.

Mus (*Oxymycterus*) *valdivianus* Philippi, Anales Museo Nac. Chile, ent. 14[a], p. 21, pl. VI, fig. 1, 1900.

Akodon valdivianus Quijada, Catal de los Vert. Viv. del Mus. Nac., Santiago, Chile, p. 69, 1911.

Geoxus valdivianus Thomas, Ann. & Mag. Nat. Hist., (9), **3**, p. 207, Feb. 1919—recorded from Beatriz, Nahuelhuapi, Argentina.

Type locality.—Province of Valdivia, Chile.

Range.—Mainland of south-central Chile in the humid forested region of the Province of Valdivia and adjoining provinces; extending where conditions are favorable eastward to the border of Argentina.

General characters.—Size rather small; color rich and dark; underparts scarcely lighter than upper; tail unicolor; skull with broad braincase and zygomata somewhat squared, but zygomatic plate sloping; cheekteeth small.

Measurements.—Two adults from Mafil, Chile: Total length 146, 139; tail 39, 40; hind foot 21, 21. Skull (No. 22527 F.M.N.H.): Greatest length 26.9; zygomatic breadth 13.5; interorbital constriction 5.2; nasals 9.6; breadth of braincase 12.9; diastema 7.5; upper toothrow 3.2 (3.2, 3.4, and 3.5 in three specimens).

Under various generic names, this species has had some sort of recognition for many years, but until the present time actual specimens from the type region have not been available for comparison with allied forms. The small series here recorded from Mafil in the Province of Valdivia, Chile includes the only existing well-prepared specimens which can be regarded as typical.

A single mounted specimen examined in the Museo Nacional of Santiago is perhaps Philippi's type. It was compared directly with the specimens from Mafil and found to be in substantial agreement with them. It carries a typewritten label, which of course is not the original one, with the following inscription: "*Mus valdivianus*, Ph. Obs. S. Landbeck, Valdivia." In one corner of this label is the penciled number 8. On the top of the wooden block upon which the specimen is mounted is an impressed number 117, and another, evidently fairly recent, in pencil, is 239. This last corresponds to the number given in Quijada's catalogue (Bol. Mus. Nac. Chile, Tomo 1, No. 7, p. 113, 1909-10). On the under side of the stand is the penciled number 419. The specimen is mounted with its tail more elevated than in Philippi's figure (l.c., pl. VI, fig. 1), but otherwise its posture is similar. It is of a faded brown color considerably lighter than in the published figure. Although described in 1858, the continued association of Landbeck's name with this specimen and the various numbers it has received seem to indicate that it has been preserved for a long period and it may well be the actual type and basis of the name *valdivianus*. In any case, the application of the name is secure, for Philippi's description and figure are sufficiently accurate to leave no room for doubt.

The relationship of this species to *michaelseni*, *fossor*, *araucanus* and *chiloensis* is very close and, as further collections are made, it is

to be expected that complete gradation from one to the other will be found.

Specimens examined.—Total 5, from the following localities: Chile: Curacautin, Province of Malleco 1; Mafil, Province of Valdivia 3; "Valdivia" 1 (type (?) in Museo Nacional, Santiago).

Notiomys valdivianus araucanus subsp. nov.

Type from Tolhuaca, Province of Malleco, Chile. No. 22498 Field Museum of Natural History. Adult female. Collected January 18, 1924 by C. C. Sanborn. Orig. No. 652.

Characters.—Similar to *N. valdivianus*, but paler in color, the underparts slightly lighter than the upperparts and the tail indistinctly bicolor; hind feet larger; cheekteeth slightly larger. Upperparts Sepia to Bister brown; underparts paler, mixed grayish and brownish; feet brownish, paler toward the ends of the toes; tail sooty brownish irregularly paler below. Skull similar to that of *valdivianus* but narrower, with a narrower braincase and slightly more produced rostrum; toothrow averaging longer than in *valdivianus*.

Measurements.—Average of five topotypes: Total length 152.8 (148-158); tail 46.8 (45-50); hind foot 22.8 (22-24). Skull of type: Greatest length 27; basilar length 21.3; zygomatic breadth 13.1; interorbital constriction 5; breadth of braincase 12.4; nasals 9.4; interparietal 9.7 x 1.8; postpalatal length 10.2; diastema 6.5; upper toothrow 3.7.

This form is found in a somewhat elevated, circumscribed and relatively dry area characterized by a growth of conifers of the genus *Araucaria*. It is closely related to *valdivianus* and differs from it in characters tending toward those of forms occurring on the eastern side of the cordilleras. Its resemblance to *michaelseni* in color is considerable and increases the probability of intergradation between the western and eastern forms.

Specimens examined.—Total 8, from the following localities: Chile: Rio Colorado, Province of Malleco 4; Tolhuaca, Province of Malleco 4.

Notiomys valdivianus chiloensis subsp. nov.

Type from Quellon, Chiloe Island, Chile. No. 22521 Field Museum of Natural History. Adult female. Collected December 25, 1922 by W. H. Osgood. Orig. No. 5465.

Characters.—Similar to *Notiomys valdivianus*, but averaging slightly darker in color and smaller in size; skull very slender with narrow braincase, compressed zygomata and elongate rostrum; cheekteeth and audital bullae noticeably smaller than in *valdivianus*.

Measurements.—Average of four adults: Total length 142 (133-154); tail 35.7 (30-44); hind foot 19.5 (18-20). Skull of type: Greatest length 25.9; basilar length 20.1; zygomatic breadth 12.1; interorbital constriction 5; breadth of braincase 11.8; nasals 10; interparietal 8.5 x 1; postpalatal length 10; diastema 6.4; upper toothrow 3.2.

So far as present material indicates, this form is well differentiated and stands out quite distinctly from the mainland forms, but its derivation is so obvious and mainland specimens are so few, especially from localities closely adjoining Chiloe Island, that it seems best to treat it as a subspecies of *valdivianus*. Seven specimens were taken at Quellon and Rio Inio on Chiloe Island in the course of several weeks collecting, so the animal is not particularly common. Most of the specimens are deep slaty blackish in color, but two are in thinner and probably more worn coat which is dark brownish.

Notiomys fossor Thomas.

Geoxus fossor Thomas, Ann. & Mag. Nat. Hist., (9), 3, pp. 208-209, Feb. 1919.

Notoxus fossor Thomas, supra cit.,—lapsus for *Geoxus fossor*.

Type locality.—Maiten, upper Rio Chubut, about S. Lat. 42°, Chubut, Argentina.

Range.—Known only from the type locality.

General characters.—Size, proportions, and cranial characters essentially as in *N. michaelseni;* color dark grayish instead of brownish; anterior palatal foramina not reaching beyond front edge of first molar.

Measurements.—Type: Total length 144; head and body 104; tail 44; hind foot 20. Skull: Greatest length 28; zygomatic breadth 13.7; nasals 10; interorbital constriction 5.2; breadth of braincase 12.8; anterior palatine foramina 6; upper toothrow 3.5.

The above characterization is based on the original description by Thomas. The form is obviously a close relative of *valdivianus* and *michaelseni* from which it differs mainly in its grayish coloration. The extension of the palatal foramina beyond the front of the first molar seems characteristic of the group, and among all specimens examined, only one, an example of typical *valdivianus* from Mafil, Chile, has the short foramina as in *fossor*.

Notiomys michaelseni Matschie.

Hesperomys (*Acodon*) *michaelseni* Matschie, Hamburger Magalhaen. Reise, Säug., p. 5, pl. figs. 1, 1a-h, 1898.

Oxymycterus microtis Allen, Bull. Amer. Mus. Nat. Hist., **19**, p. 189, May 9, 1903; Mamm. So. Patagonia, Repts. Princeton Univ. Expeds., **3**, p. 84, pl. IX, fig. 4, pl. X, fig. 7, 1905—Upper Rio Chico, Santa Cruz, Argentina.

[*Notiomys*?] *microtis* Thomas, Ann. & Mag. Nat. Hist., (7), **12**, p. 243, Aug. 1903.

[*Notiomys*?] *michaelseni* Thomas, supra cit.

Notiomys microtis Trouessart, Catal. Mamm., Suppl., p. 436, 1904.

Notiomys michaelseni Trouessart, supra cit.

Acodon (*Chelemys*) *michaelseni* Allen, Mamms. So. Patagonia, Repts. Princeton Univ. Expeds., **3**, p. 80, 1905.

Geoxus microtis Thomas, Ann. & Mag. Nat. Hist., (9), **3**, p. 209, Feb. 1919.

Type locality.—Punta Arenas, Straits of Magellan, Chile.

Range.—Southern Patagonia from the Straits of Magellan northward along the eastern base of the cordilleras to western Chubut and eastern Chile in the region about S. Lat. 45°.

General characters.—Similar in general size and cranial characters to *N. valdivianus;* tail perhaps slightly longer; nasals longer; color of upperparts more brownish, being a rather lively warm sepia; underparts well distinguished from upperparts, being buffy or cinnamomeus with slight grayish mixture; tail indistinctly bicolor.

*Measurements**.—Total length 142; head and body 97; tail 45; hind foot 21. Skull: Greatest length 27.6; basilar length 21.6; zygomatic breadth 13.4; nasals 12.2 x 3.2; interorbital constriction 4.8; interparietal 6.8 x 1.6: diastema 7; upper toothrow 3.5.

With a paratype of Allen's *Oxymycterus microtis* in hand for comparison with Matschie's original description and colored figure of *michaelseni*, the conclusion is quite clear that the two names apply to the same animal. In color and cranial characters the agreement is practically complete. The tail length (28 mm.) given by Allen for the type of *microtis* is obviously unreliable since the topotype has a much longer tail. No collector's measurements accompany this specimen and accurate measurements cannot be taken from the dried specimen, but the tail is complete and a rough measurement shows a length of at least 40 mm. The type locality of *microtis* is relatively near that of

*From type specimen as published in the original description.

michaelseni and there is scarcely any probability that two closely related forms occur so nearly together at the southern tip of South America.

Characters distinguishing *michaelseni* from *valdivianus* and allied forms to the northward are not numerous nor especially marked. So far as available data permits, it can only be said that *michaelseni* is characterized by its warm brown color and probably by somewhat lengthened nasals. It may be regarded as specifically distinct for the present, but additional material is greatly to be desired especially from localities in which it might intergrade with *fossor* or *araucanus*.

A specimen from Rio Nireguao, Chile is provisionally referred to *michaelseni* mainly on account of the color of its upperparts which agree with those of the Rio Chico specimen, but the underparts are much paler and sharply contrasted dull whitish gray. Whether this may be a tendency toward *fossor* is an open question.

Specimens examined.—Total 2, from the following localities: Argentina: Upper Rio Chico, Santa Cruz 1 (U.S.N.M. No. 84364). Chile: Rio Nireguao 1.

Notiomys connectens sp. nov.

Type from Villa Portales, Province of Cautin, Chile. Altitude 3,300 ft. No. 22508 Field Museum of Natural History. Adult male. Collected Feb. 29, 1924 by C. C. Sanborn. Orig. No. 734.

Characters.—Similar in color and length of claws to *N. vestitus*, but smaller in size and having a long narrow skull with the general characters of the *valdivianus* group although with much larger teeth. Upperparts mixed dark buffy brown and blackish producing a general effect near the olive brown of Ridgway, somewhat darker middorsally, and practically identical with the color in *vestitus*. Underparts whitish gray sharply distinguished from upperparts. Feet light grayish with slight dusky mixture. Tail dusky above, whitish gray below. Skull long and narrow; nasals and rostrum very long; braincase narrow, but very deep; zygomata somewhat compressed anteriorly; interparietal very small; audital bullae small, even slightly smaller than in *valdivianus;* molariform teeth of good size, nearly equalling those of *megalonyx*.

Measurements.—Type specimen: Total length 172; tail 53; hind foot 25. Skull of type: Greatest length 39.8; basilar length 22.4; zygomatic breadth 14.1; interorbital constriction 5.1; breadth of braincase 12.2; nasals 12.3; anterior palatine foramina 7.1; interparietal 5.9 x 1.7; diastema 7; upper toothrow 4.2.

This species is represented by a single specimen collected in a region from which both *vestitus* and *valdivianus* (*araucanus*) are known. From either of them, however, it is as distinct as it is from *megalonyx*. Still, it offers practically all the requirements of a form combining the characters of the larger members of the genus represented by *vestitus* and the smaller members represented by *valdivianus*. It would be quite impossible to allocate it with one or the other of these groups on the basis of characters which could possibly be considered of generic or subgeneric value.

In its color and its relatively short front claws it agrees with *vestitus* and the larger forms. The shape of its skull is more like that of the smaller forms although it is relatively narrower than in any of these and its teeth and general size are intermediate.

Notiomys megalonyx Waterhouse.

Hesperomys megalonyx Waterhouse, Proc. Zool. Soc. Lond., p. 154, 1844.

? *Oxymycterus niger* Philippi, Zeitsch. gesammt. Naturwiss., Berlin, neue Folge, **6**, p. 445, 1872—Peine, central Chile.

Acodon megalonyx Thomas, Ann. & Mag. Nat. Hist., (6), **14**, p. 362, Nov. 1894.

Akodon megalonyx Trouessart, Catal. Mamm., p. 538, 1897.

Akodon (*Chelemys*) *megalonyx* Thomas, Ann. & Mag. Nat. Hist., (7), **12**, p. 242, Aug. 1903.

Type locality.—Lake Quintero, Province of Valparaiso, Chile.

Range.—Coast of central Chile, thus far recorded only from the Province of Valparaiso.

General characters.—About equalling *macronyx* and *vestitus* in general size, but with a less angular skull and smaller cheekteeth. Underparts washed with brownish; tail uniform brownish above and below.

Measurements.—Two adult males, measured in the flesh: Total length 178, 170; tail 51, 56; hind foot (c.u.) 26, 28. Skull (No. 22494 F.M.N.H.): Greatest length 30.4; zygomatic breadth 16.8; interorbital constriction 5.35; diastema 8.4; upper toothrow 4.8.

This molelike mouse appears to be rather rare and difficult to obtain. Mr. Sanborn secured two specimens at Olmué and Mr. Wolffsohn has sent another from the vicinity of Quillota. Aside from these, few specimens have been preserved since the type was taken by Bridges in 1843. No specimens were found in the Museum at Santiago and none of the numerous names given by Philippi seem to apply with certainty to this form.

The species *megalonyx* is well characterized by its uniform brownish coloration which extends to both upper and lower sides of the tail and to the upper surfaces of both fore and hind feet. The underparts are grayish, but this is lightly washed with brownish. The skull is approximately of the same size and general character as in the other larger species of the genus, but the cheekteeth are noticeably smaller, approaching the relative size found in some of the smaller species. In two adult skulls the toothrow measures 4.5 and 4.8 respectively. Approach to the smaller species of the genus is also shown by the zygomata, which are compressed anteriorly, and the zygomatic plate, which is more sloping than in *vestitus*. Therefore, although it is the type species of the genus *Chelemys*, *megalonyx* does not show the extreme development of the characters upon which this genus is supposed to stand.

Philippi's *Oxymycterus niger* may be referred here as well as elsewhere, but doubtless considerable uncertainty always will attach to it. No specimen bearing this name was found in the museum at Santiago and Philippi makes no reference to it in his late papers, so perhaps the type was never preserved. It was probably an immature example which might account in part for the dark color attributed to it. The dimensions given indicate a mouse with a very short tail (28 mm.), good-sized hind feet (25.5) and very long front claws (7). These, therefore, apply to *Notiomys* better than to any other known Chilean rodent. The locality, Peine, is in the central valley not far south of Santiago in a region where the species of *Notiomys* most likely to be found would be *megalonyx*.

Specimens examined.—Total 3, from the following localities: Chile: Olmué 2; Las Rojas, near Quillota 1.

Notiomys macronyx Thomas.

Acodon macronyx Thomas, Ann. & Mag. Nat. Hist., (6), **14**, p. 362, Nov. 1894.

Akodon macronyx Trouessart, Catal. Mamm., p. 538, 1897.

Akodon (Chelemys) macronyx Thomas, Ann. & Mag. Nat. Hist., (7), **12**, p. 242, Aug. 1903.

Type locality.—Near Fort San Rafael, Province of Mendoza, Argentina.

Range.—Known only from the type locality.

General characters.—A large species similar to *vestitus* in its heavy cheekteeth and angular skull, but color paler and more grayish with tail less distinctly bicolor.

Measurements.—Type specimen (from original description): Total length 165; head and body 118; tail 47; hind foot (c.u.) 24.5. Greatest length of skull 30; greatest breadth 16.3; diastema 7.8; upper molar series 5.1.

The original description of this species states that it differs from *C. megalonyx* in "much more greyish general colour." Inferences from the description of *C. vestitus* indicate that *macronyx* is paler and with a less distinctly bicolored tail than in that form. Without examination of specimens, therefore, it is uncertain whether it is more nearly allied to *megalonyx* than to *vestitus*. The size of its cheekteeth (toothrow 5.1 in type) and geographic considerations, however, seem to point to a nearer relationship with *vestitus*. No specimens examined.

Notiomys vestitus Thomas.

Akodon (*Chelemys, subg. n.*) *vestitus* Thomas, Ann. & Mag. Nat. Hist., (7), **12**, p. 242, Aug. 1903.

Chelemys vestitus Thomas, Ann. & Mag. Nat. Hist., (9), **3**, p. 207, Feb. 1919—recorded from Beatriz, Nahuelhuapi, Argentina.

Type locality.—Valle del Lago Blanco, southwestern Chubut, Argentina.

Range.—Valleys on either side of the Chilean-Argentine boundary from west-central Chubut (S. Lat. 46°) northward to the provinces of Cautin and Malleco, western Chile (S. Lat. 38°50′).

General characters.—A large species with heavy dentition and angular skull. Apparently allied to *macronyx*, from which it differs chiefly in darker color.

Measurements.—Two adults from Rio Nireguao, Chile: Total length 195, 187; tail 56, 50; hind foot 27. Skull (No. 22509 F.M.N.H.): Greatest length 31.4; zygomatic breadth 17.7; interorbital constriction 5.3; diastema 8.3; upper toothrow 5.3.

Specimens from Rio Nireguao are to be regarded as typical of *vestitus* since this locality is similar in character and only a short distance north of Valle del Lago Blanco in Argentina. From this region its range northward is attested by a single specimen recorded by Thomas from Nahuelhuapi and by four specimens obtained by Sanborn in the provinces of Cautin and Malleco. The northernmost specimens are in essential agreement with those from the type region. If anything, they are a trifle darker in color and thus do not show any approach to *macronyx* which is said to be paler than *vestitus*. It is probable, however, that *macronyx* and *vestitus* eventually will be found to intergrade.

The localities in Cautin and Malleco are beyond the easternmost ranges of the Andes, Rio Colorado in fact being on the west slope whence there is no barrier to continuous distribution into Central Chile. That there may be intergradation with *megalonyx* is doubtful, since the smaller teeth of that species indicate it is well differentiated. From the Province of Cautin northward in Chile to the Province of Valparaiso, a distance of some four hundred miles, there are no records of the genus.

Specimens examined.—Total 12, from the following localities: Chile: Casa Richards, Rio Nireguao, Province of Llanquihue 8; Lake Galletué, Province of Cautin 2; Rio Colorado, Province of Malleco 2.

Notiomys vestitus alleni subsp. nov.

Akodon (*Chelemys*) *vestitus* Allen, Mamm. So. Patagonia, Repts. Princeton Univ. Expeds., 3, p. 78, pl. xi, fig. 5, pl. xii, figs. 9-10, 1905.

Type from upper Rio Chico, Santa Cruz, southern Argentina. No. 84227 U. S. National Museum. Adult male. Collected Feb. 8, 1897 by O. A. Peterson. Orig. No. 372.

Characters.—Similar to *Notiomys vestitus*, but color paler, tending to buffy brownish rather than to sooty or grayish. Upperparts Dresden brown throughout, the sides like the back and the underparts creamy white nearly concealing the plumbeous undercolor. Feet white; tail distinctly bicolor, the upper side a paler brownish than the body. Skull essentially as in *vestitus*, but zygomatic plate averaging less in its antero-posterior dimension.

Measurements.—Average of six adults: Total length 173 (168-180); tail vertebrae 50 (45-57); hind foot 25.3 (25-26). Skull of type: Greatest length 30.8; basilar length 25.5; zygomatic breadth 18.3; interorbital constriction 5.2; nasals 10.5 x 41; interparietal 8 x 2.4; postpalatal length 11.8; diastema 7.7; upper toothrow 5.4.

The paler, more brownish color of this form effectively distinguishes it from typical *vestitus*. It has been rather fully described and its skull and teeth have been figured by Allen (l.c.) who had no specimens of typical *vestitus* and therefore was unable to appreciate its subspecific characters.

A series of six specimens, kindly loaned by the U. S. National Museum, has been examined. The form is at present known only from the type locality, but may range over considerable of extreme southern Patagonia. Since the smaller forms of *Notiomys* reach the Straits of Magellan, it is not unlikely that the larger ones do. *Oxymycterus del-*

fini Cabrera (Rev. Chilena Hist. Nat., **9**, pp. 15-16, Feb. 1905), described from Punta Arenas, may possibly belong in this group and be closely allied to *alleni*, but if so it is probably well distinguished by darker color, since the original description states that it is "Color de cafe mui oscuro, casi negro." "Las unas mui largas afiladas y corvas" seems to point to affinity with *Notiomys* and the measurements given are not especially discrepant, although the length of the tail is given as 63 mm. which is 6 mm. more than the extreme in *alleni*. Without examination of the type, however, the position of *O. delfini* seems doubtful. A single specimen from Punta Arenas, without skull or measurements, examined by Allen and provisionally referred to *michaelseni* (Mamm. So. Pat., p. 80) may also belong here.